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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,716	04/13/2001	Yuri Ton	00/21144	4965

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G.E. EHRLICH (1995) LTD.  
c/o ANTHONY CASTORINA  
SUITE 207  
2001 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202

EXAMINER

NGUYEN, SON T

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

9

<b>Office Action Summary</b>	<b>Application No.</b> 09/833,716	<b>Applicant(s)</b> TON ET AL.	
	<b>Examiner</b> Son T. Nguyen	<b>Art Unit</b> 3643	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 April 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-4,6-28** are rejected under 35 U.S.C. 102(b) as being anticipated by Carlson et al. (US 4,569,150).

For claim 1, Carlson et al. disclose a method of assessing a state of a plant comprising the steps of collecting data pertaining to at least one plant related parameter over a predetermined time period (col. 3, lines 25-36 & 54-68); analyzing the data to identify a trend in the data, the trend being indicative of the state of the plant (col. 4, under "III. Analysis of data using regression analysis to develop equations").

For claim 2, Carlson et al. further disclose the step of correlating the trend to an additional trend derived from data pertaining to an additional plant related parameter collected over the time period (Carlson teach experimentation on a group of plants, col. 4, line 32 and in table I, col. 6). The plants were also compared with a group of "control" plants (col. 5, lines 65-68).

For claims 3,7, Carlson further disclose correlating the trend to at least one environmental parameter data such as temperature, light, photosynthesis, and CO<sub>2</sub> prior to determine the state of the plant.

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For claim 4, Carlson further disclose the trend represents positive, negative and no change in value of the plant's related parameter (col. 6, lines 16-35).

For claim 6, data obtained by Carlson et al. include CO<sub>2</sub>, air temperature, light or solar radiation (col. 3, lines 55-64).

For claim 8, Carlson further disclose collecting data is effected by at least one sensor 203,305 positioned in proximity to the plant (col. 7, lines 41-50).

For claim 9, Carlson further disclose using a computer to analyze the data (col. 4, line 6).

For claim 10, in addition to the above, Carlson disclose a user client to control and analyze data.

For claim 11, the communication network is done through the mainframe computers (col. 4, line 6) of Carlson.

For claim 12, the monitor of the computer of Carlson displays data collected for analysis of the plant.

For claims 13,14, the cooling, heating and CO<sub>2</sub> systems as listed in cols. 8 & 9 of Carlson are devices in communication with the user to modify the state of the plant. These devices are irrigation device and climate control device.

For claims 15-16,20-24,27 in addition to the above steps, Carlson further disclose selecting a first plant and a second plant in their method. A group of plants (col. 4, line 33) and a control group of plants (col. 5, lines 66-68) are being studied. Carlson further teach comparing the first set of data to the second set of data grown under 3 strategies as stated in col. 6, lines 15-30.

For claims 17-19, Carlson further disclose selecting the first and second plants according to selection criterion such as plant flowering shoot, roots, etc. (col. 6, Table I where 0=original mother shoot plus roots, 1=apical flowering shoot on mother shoot, etc.).

For claims 25-26, in addition to the above paragraphs, the sensors 203,305 of Carlson are positioned in proximity to the first and second plants so that readings or data can be obtained.

For claim 28, Carlson teach co-cultivating a group of plants which comprises first, second, third, etc. plants being grown together in which one plant being more sensitive to a change in at least one environmental factor as shown in Table I of col. 6; and monitoring at least one parameter associated with the first plant to assess the state of the crop (as explained in the above paragraphs).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson et al. (as above) in view of Huguet et al. (US 4,638,594). Carlson teach using a computer to generate data through formulation and tables/charts. However, Carlson are silent about graphically representing the data. Huguet et al. teach a method of assessing a state of a plant (water/moisture factor) in which they obtain data regarding

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moisture/water in plants and graphically representing the data obtain on a graph as shown in the figures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to graphically represent data collected as taught by Huguet for analyzing in the method of Carlson in order to exhibit relationship between data points obtained for studying the plants.

5. The following prior arts are made of record to provide the best available relevant examples of a method of assessing a state of a plant: 6060314 teaches a method of propagating plants which data regarding CO<sub>2</sub> in plants are needed for analysis. 5864984 teaches system and method for measuring seedlot vigor. 5299383 teaches plant cultivation method which involves in collecting data such as pH value, water, temperature in plants. 5572827 teaches a method for applying hydrogel coatings to plants in which data regarding moisture, temperature, leaf emergence time are needed for analysis. 5735077 teaches corn hybrid evaluation which requires physical properties of the corn for the analysis. 5031358 teaches portable plant husbandry system. 4755942 teaches system for indicating water stress in crops which inhibits data collection if solar insolation exceeds a range from an initial measured value. 5764819 teaches methods for classifying plants for evaluation and breeding programs by use of remote sensing and image analysis technology.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son T. Nguyen whose telephone number is (703) 305-0765. The examiner can normally be reached on Monday - Friday from 8:30 a.m. to 5:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the

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examiner's supervisor, Peter Poon, can be reached at (703) 308-2574. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177.

Son T. Nguyen, *STN*  
Patent Examiner, GAU 3643  
June 27, 2002

*Charles T. Jordan*  
**CHARLES T. JORDAN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3600**